

*Client's ref.: VITO3-0111/04-03-11
File:0608-9893USf/Robert/Kevin*

What Is Claimed Is:

1 1. A method for generating error detection code of a data
2 sector with sector data information and main data, comprising
3 the following steps:

4 generating a first error detection code according to the
5 main data;

6 generating a second error detection code according to the
7 sector data information; and

8 generating the error detection code by operating the first
9 error detection code and the second detection code;
10 wherein the first error detection code is generated when
11 the main data is read from a host.

1 2. The method as claimed in claim 1, wherein the error
2 detection code is generated by performing exclusive-OR
3 operation of the first error detection code and the second error
4 detection code.

1 3. The method as claimed in claim 1, wherein the sector
2 data information is substituted by zero when generating the
3 first error detection code.

1 4. The method as claimed in claim 1, wherein the main data
2 is substituted by zero when generating the second error
3 detection code.

1 5. The method as claimed in claim 1, wherein the sector
2 data information comprises identification data (ID), ID error
3 correction code (IED), and reserve data (RSV).

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1 6. A method for generating error detection code of a data
2 sector with sector data information and main data, comprising
3 the following steps:

4 generating a first error detection code according to the
5 sector data information and the main data, wherein
6 the sector data information is substituted by a first
7 substitutional value;

8 generating a second error detection code according to the
9 sector data information and the main data, wherein
10 the main data is substituted by a second
11 substitutional value; and

12 generating error detection code by operating the first
13 error detection code, the second detection code and
14 a correction constant, wherein the correction
15 constant is derived depending on the first
16 substitutional value and the second substitutional
17 value;

18 wherein the first error correction code is generated when
19 the main data is read from a host.

1 7. The method as claimed in claim 6, wherein the error
2 detection code is generated by performing exclusive-OR
3 operation of the first error detection code, the second error
4 detection code and the correction constant.

1 8. The method as claimed in claim 6, wherein the correct
2 constant is not taken into consideration when the first
3 substitutional value and the second substitutional value are
4 both substituted by zero.

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1 9. The method as claimed in claim 6, wherein the sector
2 data information comprises identification data (ID), ID error
3 correction code (IED), and reserve data (RSV).

1 10. A method for generating error detection code of a data
2 sector with sector data information and main data, comprising
3 the following steps:

4 generating a first error detection code according to the
5 sector data information and the main data, wherein
6 the sector data information is substituted by a first
7 substitutional value;

8 generating a second error detection code according to the
9 sector data information; and

10 generating error detection code by operating the first
11 error detection code, the second detection code and
12 a correction constant, wherein the correction
13 constant is derived depending on the first
14 substitutional value;

15 wherein the main data is substituted by zero when
16 generating the second error detection code.

1 11. The method as claimed in claim 10, wherein the first
2 error detection code is generated when the main data is reading
3 from a host.

1 12. The method as claimed in claim 10, wherein the error
2 detection code is generated by performing exclusive-OR
3 operation of the first error detection code, the second error
4 detection code and the correction constant.

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1 13. The method as claimed in claim 10, wherein a formula
2 is provided to skip considering the following main data when
3 generating the second error detection code.

1 14. The method as claimed in claim 10, wherein the correct
2 constant is not taken into consideration when the first
3 substitutional value is substituted by zero.

1 15. The method as claimed in claim 10, wherein the sector
2 data information comprises identification data (ID), ID error
3 correction code (IED), and reserve data (RSV).

1 16. A method for generating error detection code of a
2 plurality of data sector with a plurality of different sector
3 data information and same main data, comprising the following
4 steps:

5 generating a first error detection code according to the
6 same main data, wherein each different sector data
7 information are respectively substituted by a
8 corresponding first substitutional value;
9 generating a plurality of second error detection codes
10 according to each corresponding different sector
11 data information; and
12 generating a plurality of error detection codes by
13 operating the first error detection code, the
14 corresponding plurality of the second error
15 detection codes, and a correction constant;
16 wherein the first error detection code is generated when
17 the main data is read from a host.

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1 17. The method as claimed in claim 16, wherein the error
2 detection code is generated by performing exclusive-OR
3 operation of the first error detection code, the second error
4 detection code, and the correction constant.

1 18. The method as claimed in claim 16, wherein the second
2 error detection code is generated only according to each
3 different sector data information by providing a formula to skip
4 considering the following main data.

1 19. The method as claimed in claim 16, wherein the main
2 data is substituted by a second substitutional value when the
3 second error detection code is generated according to both the
4 corresponding sector data information and the main data.

1 20. The method as claimed in claim 19, wherein the
2 correction constant is derived depending on the first
3 substitutional value and the second substitutional value.

1 21. The method as claimed in claim 20, wherein the correct
2 constant is not taken into consideration when the corresponding
3 first substitutional value and the second substitutional value
4 are both substituted by zero.

1 22. The method as claimed in claim 16, wherein the sector
2 data information comprising identification data (ID), ID error
3 correction code (IED), and reserve data (RSV).